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TITLE: SEMICONDUCTOR INTEGRATED CIRCUIT DEVICE

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ABSTRACT:

PURPOSE: To obtain the resistance of a polycrystalline silicon resistor with high reproducibility by a method wherein a second metal wirings provided on a third insulating film formed on a first metal wiring are directly brought into contact with the surface of the polycrystalline silicon resistor to use the second metal wirings as the integrated circuit internal connection wirings of the polycrystalline silicon resistor.

CONSTITUTION: After a first insulating film 2 is formed on a silicon substrate 1, a polycrystalline silicon resistor 3 doped with P-type impurity is formed. After a second insulating film 4 is formed, a first metal wiring 5 is formed. After a thermal treatment is applied to obtain an ohmic contact with the foundation, a third insulating film 6 is formed by a plasma CVD method. Then organic solvent containing Si is applied to the surface of

the insulating film
6 to form a spin-on-glass layer. After that, a thermal
treatment is applied
for leveling, apertures 7 are drilled, second metal wirings
8 are formed and,
after a protective film is formed, a thermal treatment is
applied to remove
plasma application damages produced by plasma dry etching.

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との接触部では第1金属配線のオーミック接触用の熱処理および第3絶縁膜の平坦化熱処理を受けないので、過剰な合金層をおさえ、従って接触部からの合金層のしみ出しを制御でき、ポリシリコン抵抗体の抵抗値のばらつきを低減でき、抵抗値の再現性のよい優れた半導体集積回路装置を実現できる。

4. 図面の簡単な説明

第1図は、本発明の一実施例半導体集積回路装置の断面構造図、第2図は、従来の半導体集積回路装置の断面構造図である。

2……第1絶縁膜、3……ポリシリコン抵抗体
4……第2絶縁膜、5……第1金属配線、6……
第3絶縁膜、7……開口部、8……第2金属配線

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